

REMARKS

Pursuant to 37 CFR 1.111, Applicants request reconsideration of each and every ground of rejection set forth in the Office Action.

Claims 2-9, 12, and 14-31 are pending in the application. Claims 27-31, which do not include any new subject matter, have been added; Claims 2-7, 12, 14-15, 22, and 24-26 have been amended; and Claims 1, 10, 11, and 13 have been cancelled.

Rejections Under 35 USC §103

The Examiner rejected Claims 1-26 under 35 USC §103(a) as being unpatentable over Brissette (U.S. Patent 4,460,182) in view of Smith (U.S. Patent 5,525,112). More specifically, the Examiner stated that it would be obvious to one having ordinary skill in the art at the time of the invention to modify the squared telescoping shafts disclosed by Brissette to be splined as taught by Smith to increase torque capacity of the shaft.

Claim 1 has been cancelled, and independent Claim 27 has been added. Applicants respectfully assert that the Brissette and Smith references do not teach each and every element of new Claim 27. Specifically, Applicants assert that the Brissette and Smith references at least do not teach the element of a seal including a first splined inner-portion, a second splined inner-portion, and an intermediate portion where the first and second inner-portions are substantially parallel to each other; where the first splined inner-portion is located proximal to the bottom portion of the seal; and the second inner-portion is located proximal to the top portion of the

seal. Applicants also respectfully assert that Claims 2-9, 12, 14, 26, and 28-30, which depend on Claim 7 are allowable in light of the patentability of Claim 27.

Claim 15 has been amended to include the limitation that the first and second splined inner-portions of the seal are adapted to be slidably fitted around at least a part of the splined portions of separate respective tubes of a double-tube telescopically resident splined shaft. Applicants respectfully assert that the Brissette and Smith references do not teach at least the element of a seal adapted to be slidably fitted around at least a part of splined portions of respective tubes. Applicants also respectfully assert that Claims 16-21 and 31, which depend on Claim 15, are allowable in light of the reasons above discussing the patentability of Claim 15.


Claim 22 has been amended to include the limitation of slidably fitting the first splined inner-portion of the seal around at least part of the splined portion of the first member, and the limitation of slidably fitting the second splined inner-portion of the seal around at least part of the splined portion of the second member. Applicants respectfully assert that the Brissette and Smith references do not teach at least the elements of a slidably fitting the first splined inner-portion of the seal around at least part of the splined portion of the first member, and slidably fitting the second splined inner-portion of the seal around at least part of the splined portion of the second member. Applicants also respectfully assert that Claims 23-25, which depend on Claim 22, are allowable in light of the reasons above discussing the patentability of Claim 22.

SUMMARY

Applicants submit that pending Claims 2-7, 12, 14-15, 22, and 24-26 as amended are patentable; and that Claims 8-9, 16-21, 23, and 27-31 are patentable. Applicants respectfully request the Examiner grant early allowance of these claims. The Examiner is invited to contact the undersigned attorneys for the Applicants via telephone if such communication would expedite this application.

Respectfully submitted,

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Appendix A

Perspective and cut-away views of the seal 60 are shown in Figures 7 and 8. The seal 60 is preferably generally cylindrical and has a top portion 64 and a bottom portion 68. A generally cylindrical splined inner surface 76 of the top portion 64 defines an axially extending generally cylindrical opening 72 extending throughout the length of the top portion 64 of the seal 60. Likewise, a generally cylindrical splined inner surface 84 of the bottom portion 68 defines an axially extending generally cylindrical opening 88 extending throughout the length of the bottom portion 68 of the seal 60. The opening 72 defined by the splined inner surface 76 of the top portion 64 communicates with the opening 88 defined by the splined inner surface 84 of the bottom portion 68, thereby extending continuously from the top of the seal 92 to the bottom of the seal 96. The diameter 100 of the splined inner surface 84 of the bottom portion 68 is preferably greater than the diameter 104 of the splined inner surface 76 of the top portion 64. The splined portions are preferably defined by inwardly-projecting splines extending in the axial direction along the inner surface of the seal.

Appendix B

2. (Amended) The invention of claim [1] 27 wherein said seal is one-piece.
3. (Amended) The invention of claim [1] 27 wherein said seal is plastic.
4. (Amended) The invention of claim [1] 27 wherein said seal is flexible.
5. (Amended) The invention of claim [1] 27 wherein each of said first and second members have respective diameters of approximately a same respective value, and each of said first and second members respective splined portions have a respective length of about three times said value of said respective diameter of said first member.
6. (Amended) The invention of claim [1] 27 wherein said first and second splined inner-portions of said seal are fit around at least a part of the respective splined portions of said first and second members utilizing initial preload force.
7. (Amended) The invention of claim [1] 27 [further comprising] wherein said clamp comprises a spring within at least one of said first and second splined inner-portions of said seal providing preload force towards at least one of the respective splined portions of said first and second members.
12. (Amended) The invention of claim [1] 27 wherein said first splined inner-portion of said seal is air-tightly fit around at least a part of the splined portion of said first member, and the second splined inner-portion of said seal is air-tightly fit around at least a part of the splined portion of said second member.
14. (Amended) The invention of claim [1] 27 wherein said first and second members of said [driveshaft] shaft and said first and second splined inner-portions of said seal are generally cylindrical.

15. (Amended) A seal for a double-tube splined [driveshaft] shaft, said seal comprising:

a first splined inner-portion having a first diameter; and

a second splined inner-portion having a second diameter, wherein said first diameter of said first splined inner-portion of said seal is larger than said second diameter of said second splined inner-portion of said seal, and said first and second splined inner-portions of said seal are each adapted to be slidably fitted around at least a part of splined portions of separate respective tubes of a double-tube telescopically resident splined [driveshaft] shaft.

22. (Twice Amended) A method of attaching a seal to a shaft comprising:

providing a shaft comprising first and second members each having splined portions, said second member being telescopically resident within said first member, said splined portion of said first member cooperating with said splined portion of said second member thereby allowing said first and second members to cooperatively form the shaft;

providing a seal comprising a first [splined-inner portion] splined inner-portion having a first diameter, and a second [splined-inner portion] splined inner-portion having a second diameter, wherein said first diameter of said first splined inner-portion is larger than said second diameter of said second splined inner-portion;

slidably fitting the first splined inner-portion of said seal around at least a part of the splined portion of said first member; and

slidably fitting the second splined inner-portion of said seal around at least a part of the splined portion of said second member.

24. (Twice Amended) The invention of claim 22 further comprising the step of providing a spring within at least one of said first and second splined inner-portions

of said seal, said spring providing preload force against at least one of said respective splined portions of said first and second members of said shaft.

25. (Twice Amended) The invention of claim 22 further comprising the step of providing a clamp, wherein at least one of said first and second splined inner-
portions of said seal is fitted to at least one of said splined portions of said respective first and second members of said shaft with the clamp.

26. (Amended) The invention of claim [1] 27 wherein said first member is adapted to couple with a transmission of the vehicle, and said second member is adapted to couple with a differential of the vehicle.